HUNTSVILLE

The Star of Alabama

Floodplain Management Plan

2013 Progress/Evaluation Report

Introduction

The purpose of this report is to document flooding events since, evaluate progress on, and recommend changes (if any) in the 2010-2011 updated City of Huntsville (City) Floodplain Management Plan (FMP). The Floodplain Management Plan 2010-2011 update is available to the public at the following website: http://www.huntsvilleal.gov/engineering/FloodplainManagementPlanFinal.pdf .

This report also plays an integral role in the City's participation in the Federal Emergency Management Agency (FEMA) Community Rating System (CRS) program, as it relates to the City's participation in FEMA's National Flood Insurance Program (NFIP). The City receives points in the CRS program for, among other things, preparing and implementing a FMP. These points total to form a rating which translates into a percentage discount that City citizens and/or property owners receive on their NFIP flood insurance policies.

The CRS Coordinators Manual (2007) states the following in regards to preparation of this report:

> The community must submit the following documentation with its annual CRS recertification (see Section 214):
>
> g. An annual report on evaluating progress toward implementing the action plan's objectives and/or the recommendations of the area analyses. A single report may be prepared for all area analyses. The evaluation report must be submitted to the governing body, released to the media, made available to the public, and included as part of the community's annual recertification. The report must include the following:
>
> 1. A description of how the evaluation report was prepared and how it is submitted to the governing body, released to the media, and made available to the public.
> 2. How the reader can obtain a copy of the original plan or area analysis report;
> 3. A review of each recommendation or action item in the action plan or area analysis report, including a statement on how much was accomplished during the previous year;
> 4. A discussion of why any objectives were not reached or why implementation is behind schedule; and
> 5. Recommendations for new projects or revised recommendations.
>
> The submittal must include other documentation to demonstrate that the evaluation report was submitted to the governing body, released to the media, made available to the public and/or prepared by the same planning committee that prepared the plan.
>
> If the community fails to submit an annual progress report with its recertification, there is no credit (FMP = 0 and RLAA = 0). Without continued credit, a category C repetitive loss community will revert to a Class 10.

The objective of the annual evaluation report and the five-year plan update is to ensure that there is a continuing and responsive planning process. It is required for the community to continue to receive the credit for its floodplain management planning. Continued credit for floodplain management planning is dependent on the report's being submitted with the community's annual CRS recertification.

The review of each recommendation in the action plan or area analysis report must state how much was accomplished during the previous year. Where possible, the objectives and progress toward them should be measurable (e.g., "five of the six lots slated for acquisition were purchased" or "we improved one mile of stream channel"). Where a recommendation or action item is not scheduled to be addressed during the year, it should still be listed and so noted (e.g., "scheduled for 2007").

If appropriate, new projects or revised objectives may be established. For example, if fewer people requested technical advice than expected, the next year's plan might have a smaller target number. If the original plan's projects or objectives are changed, the evaluation report or a plan amendment must be adopted by the governing body. If an area analysis' recommendations are changed, the change must be approved by the appropriate department head.

Example 514.f-1. Floodville's staff prepares the annual evaluation report by March 1 each year. This is added to the City Manager's March report to the City Council, which is copied to the local media, the Chamber of Commerce, and three neighborhood organizations that helped prepare the plan. Members of the public may review copies in City Hall.

FAILURE TO SUBMIT THE FLOODPLAIN MANAGEMENT PLAN'S EVALUATION REPORT WITH THE ANNUAL RECERTIFICATION OR THE FIVE-YEAR UPDATE AT THE FOLLOWING CYCLE VERIFICATION WILL RESULT IN LOSS OF THE PLANNING CREDIT (I.E., FMP = 0). FAILURE TO SUBMIT THE AREA ANALYSIS' EVALUATION REPORT WITH THE ANNUAL RECERTIFICATION WILL RESULT IN LOSS OF THE CREDIT (I.E., RLAA = 0). LOSS OF CREDIT FOR THIS ACTIVITY WILL CAUSE A REPETITIVE LOSS CATEGORY C COMMUNITY TO REVERT TO A CLASS 10.

The City is currently a Repetitive Loss Category B with a CRS Class 8 rating which translates to a 10% discount in FEMA flood insurance citizens and/or property owners within the City limits.

This report was prepared by City staff on the Floodplain Management Plan Committee and submitted via e-mail to other members for review and comment. The report was submitted via e-mail to the governing body including appropriate administration staff. Appropriate administration staff provided it to the local media. The report was also made available to the public at the following website: http://www.huntsvilleal.gov/engineering/2013FMPAnnualProgress.pdf . The websites can be checked for verification and copies of e-mails are attached for further documentation.

Flood Events

This section will serve as an addendum to section 4.1.3 of the FMP and documents flood events affecting the City from December 2009 (the last major event where the FMP left off) through August 2013. In order to provide continuity, the figure numbers in this section begin where the FMP left off.

November 30, 2010

The rainfall amount of 3.93 inches made it the all-time wettest day in November on record in Huntsville, according to the NWS. (NWS 2010) The rain caused streams and rivers to overtop their banks. Standing water in low lying areas forced several motorists to abandon their vehicles. In addition, the Huntsville-Madison County Emergency Management Agency (EMA) responded to two overnight water rescues. School systems in the area delayed or dismissed the start of school due to the road closures. Several road ways were temporarily closed and a subdivision entrance off of County Line Road was barricaded by authorities due to deep flood waters. (WAFF 2010)

(Source: Huntsville Times 2010)

Figure 4-18. November 30, 2010 – Flooding on Caldwell Lane (located off of US 431)

January 11, 2012

2.41 inches of rainfall was reported at the Huntsville International Airport while some areas of the Madison County reported 3-4 inches of rainfall. The rainfall peaked between 3 and 4 AM when 0.69 inches was recorded. This led to flash flooding throughout the City. In addition to precipitation, hail was also widespread. The worst of the flooding occurred along Oakwood Avenue near Giles Drive and Maysville Road, where runoff overtopped the roadway forcing the road to close. A resident on Oakwood Avenue indicated that she had lived there for 20 years and had not seen that extent of flooding previously. The EMA rescued a stranded motorist trapped in rising water on Giles Drive. A section of pavement on Rodgers Drive buckled and broke. Part of Bob Wallace Avenue was also closed, as well as portions of Bankhead Parkway. (AL.com 2012a and AL.com 2012b)

(Source: Huntsville Times 2012)

Figure 4-19. January 11, 2012 – Stranded Car on Giles Drive

(Source: Huntsville Times 2012)

Figure 4-20. January 11, 2012 – Flooding on Monte Sano Mountain at eastern end of Oakwood Avenue

(Source: Huntsville Times 2012)

Figure 4-21. January 11, 2012 – Pavement Damage at Rodgers Drive

(Source: Huntsville Times 2012)

Figure 4-22. January 11, 2012 – Fagan Creek at California Street

July 4, 2013

A heavy band of showers stretched along the north and west sides of Huntsville causing standing water along roadways, fallen trees and some roadway damage. The recorded rainfall amount at Huntsville International Airport was 4.64 inches; however areas to the north and west received larger amounts. Flooding impacted the Decatur, Hartselle and the western portion of Huntsville and resulted in many road closings. Roadway flooding was reported at County Line Road, Old Railroad Bed, Capshaw Road, Huntsville Browns Ferry Road and Rock Creek Boulevard. The road shoulders along Capshaw Road washed away in some areas. (AL.com 2013 and WHNT 2013a)

(Source: WHNT 2013b)

Figure 4-23. July 4, 2013 – Flooding along Capshaw Road at Hammond Court

(Source: WHNT 2013b)

Figure 4-23. July 4, 2013 – Knox Creek overflows at Knox Creek Subdivision

References

AL.com 2012a. *Heavy Rain Leads to Flooding in Huntsville: Roads Closing (with video)* *http://blog.al.com/breaking/2012/01/heavy_rain_leads_to_flooding_i.html* January 11, 2012

AL.com 2012b. *As Huntsville Flood Waters Recede, Snow comes into Today's Forecast (with video)* http://blog.al.com/breaking/2012/01/as_huntsville_flood_waters_rec.html January 12, 2012

AL.com 2013 *Huntsville-Area Law Enforcement Warns of Road Closures, Flooded Area (Updated)* *http://blog.al.com/breaking/2013/07/madison_county_law_enforcement_1.html* July 04, 2013

Huntsville Times, 2010. *Huntsville Flooding*, http://photos.al.com/huntsville-times/2010/11/huntsville_flooding.html November 30, 2010

Huntsville Times, 2012. *Huntsville Woman Rescued after Car Stall in Flood Waters*, *http://blog.al.com/breaking/2012/01/huntsville_woman_rescued_after.html* January 11, 2012.

National Weather Service (NWS), 2010. *November Climate Summary for Huntsville and Muscle Shoals*, http://www.srh.noaa.gov/hun/?n=climatesummary_november2010

WAFF 48 news, 2010. *Heavy Rain Causes Flooding in North Alabama*, http://www.waff.com/Global/story.asp?S=13587332, Posted November 30, 2010 and Updated December 30, 2010.

WHNT 19 News, 2013a *July 4th: Several Roads Under Water Across North Alabama*, http://whnt.com/2013/07/04/flash-flood-warning-in-effect-some-roads-covered/ July 4, 2013.

WHNT 19 News, 2013b, *Pictures: July 4th Flooding*, http://whnt.com/2013/07/04/pictures-july-4th-flooding/ July 4, 2013.

Action Items

Following is a list of the 11 Action Items (AIs) from the FMP 2010-2011 update Section 8 Action Plan, including the City department/division responsible for the item implementation.

1. Floodplain Mapping – Engineering Division

Hydrologic and hydraulic models and mapping including existing and future (full build out) conditions for significant stream channels for the following uses:

a. Submit existing conditions to FEMA for map revisions.
b. Evaluate flood protection measures.
c. Flood stage forecast mapping.

2. Watershed Plans – Engineering Division

With input from the Planning and Natural Resources Divisions, prepare master flood protection plans using the models and mapping developed pursuant to the previous AI. Each plan should include the following:

a. An inventory of the flood prone buildings, critical facilities and infrastructure to help determine the threat to life, safety and health in the area.
b. An evaluation of structural and property protection measures (and combinations of those measures) that will protect lives, safety, health and existing development. The evaluation would compare the effectiveness of feasible alternatives including regional retention basins, channel modifications, acquisition, relocation and floodproofing. The evaluations should examine:
    i. The benefits and costs of the alternatives.
    ii. Their impact on wetlands and streams, natural or other sensitive areas, habitat and water quality.
    iii. How they can support other objectives of the community, such as expansion of open space, greenways, stream restoration, and economic development.
    iv. Incorporation of aesthetic and long-term maintenance needs.
c. Recommendations for projects:
    i. Priority should be given to properties in the floodway.
    ii. Priority should be given to cost effective projects.
d. Determination of the best approach to managing stormwater runoff (primarily for the 100-year event) from new development in the watershed (existing versus future conditions), including location for regional detention facilities.
e. An analysis of the costs and benefits of installing gauges needed to detect and predict flooding.

3. Stormwater Management Regulations – Engineering Division

With the Natural Resources, Inspection, Planning and Legal Divisions, review and revise the standards and procedures in the Subdivision Regulations Manual and the Stormwater Management Manual for new development. The review should include engineers and technical advisors who are familiar with stormwater management practices in Huntsville and in other communities. The review should consider the following concerns:

a. Appropriate standards to ensure that post-development flows leaving a development will not cause increased damage to downstream properties.
b. City inspections to ensure maintenance of new stormwater management facilities that will be located on private property.
c. Best management practices that protect water quality and other provisions to meet upcoming National Pollutant Discharge Elimination System (NPDES) requirements.
d. Replacement of the regulatory standards with watershed specific criteria when watershed plans are completed and adopted (AI 2).
e. The impact of different standards and procedures on the cost of development and the long-term costs of flooding and facility maintenance.

4. Floodplain and Zoning Regulations – Engineering Division and Planning Department

a. Ensure that the City meets all regulatory provisions required by the NFIP and meets or exceeds requirements for current level of participation in the CRS.
b. With the Inspection, Natural Resources and Legal Divisions, review and revise the applicable portions of the zoning ordinance in regards to item a. above and floodplain development in general. The following additions are recommended by the Committee and are credited under the CRS:
    i. Consider increasing freeboard requirement (430a).
    ii. Standards to protect building foundations constructed on fill in the floodplain from erosion and scour (430b).
    iii. Prohibiting and/or protecting critical facilities in the 500-year floodplain (430e).
    iv. Buffers adjacent to streams or natural areas (430g).
    v. Restrictions on use of enclosures below elevated buildings (430h).
    vi. Drainage plans for all buildings, including those not in the floodplain (450c).
    vii. Consider regulating to the future conditions floodplain (reference AI 1) (450i).
c. Once the new watershed models and floodplain maps are available, a procedure should be adopted to evaluate the flood impact caused by zoning changes to ensure that they do not have detrimental impacts on flooding and drainage.

5. Regulatory Procedures – Engineering Division and Inspection Department

a. With the Planning/Zoning, Inspection, Natural Resources, and Legal Departments, review the City's procedures for development plan review, permit issuance and inspections to ensure that all the floodplain and stormwater regulations that are dependent on more than one office are properly and fully enforced.
b. With all appropriate [departments/] divisions, conduct an annual review of the procedures to identify whether any further changes are needed.
c. With the Planning (including Zoning) Department and [local Emergency Management Agencies] EMA[s] review the procedures to be followed after a flood to ensure that all repairs and reconstruction will meet the requirements of the NFIP. The procedures should account for potential disaster assistance and other sources of funding for mitigation opportunities.
d. Strive to maintain a Building Code Effectiveness Grading Schedule (BCEGS) class of 6 or better to aid in a CRS ranking of 7 or better.

6. Drainage Maintenance Program – Public Works

In cooperation with the Engineering, Natural Resources, and Landscape Management Divisions and Operation Green Team, review and revise drainage system maintenance procedures.

a. Include streamside residents and interested organizations in the preparation of the procedures.
b. Account for the requirements of relevant agencies and programs, including the Alabama Department of Environmental Management (ADEM), United States Army Corp of Engineers (COE), NPDES, and CRS.
c. Incorporate cooperative efforts by streamside residents and the general public.
d. Incorporate maintenance standards and procedures that will protect sensitive areas and habitat.
e. Review the long-term costs and benefits of dredging and alternative ways to reduce sedimentation.

7. Pilot Flood Response Plan – Emergency Management Agency

a. In conjunction with law enforcement, fire and medical response agencies, prepare a pilot flood response plan for one floodplain area.
b. Use a flood stage forecast map prepared pursuant to AI 1 Floodplain Mapping.
c. Evaluate the costs and benefits of the plan, with and without rain and stream gauges that would provide early flood detection.
d. Evaluate the costs and benefits of a flood warning system for the City (any new detection or warning system is contingent on the development and implementation of a new countywide radio system).

8. Critical Facilities Plan – Emergency Management Agency

Identify the critical facilities that are affected by flooding. Work with their managers to determine any special flood warning and response support they may need from the City and encourage them to prepare their own flood response plans.

9. Ongoing Public Information – Engineering Division

In cooperation with the Committee, implement ongoing information and technical assistance activities:

a. Providing map and flood hazard information to inquirers.
b. Providing one-on-one advice and assistance on flood protection measures.
c. Providing reference materials to the public library.
d. Issuing news releases and news articles.
e. Making presentations at meetings of home owners associations and other interested groups.
f. Conducting an annual mailing to property owners in the floodplain.
g. Coordinating with the Huntsville Board of Realtors® to discuss City support of disclosure of flood hazards.

10. New Public Information Projects – Engineering Division

In cooperation with the Committee, design and initiate new activities:

a. Publicity of property protection projects that have been constructed by Huntsville homeowners.
b. Incorporating/updating a flood protection web page on the City's web site.
c. Providing a library of additional flood-related videos to the public access cable television channel.
d. Preparing a homeowner's flood protection manual.
e. Preparation of sinkhole and landslide hazard maps and public information materials to explain them and insurance options.

11. Storm Water User Fee – Engineering Division/Floodplain Management Committee/Consulting Engineering Firm

Determine the appropriate mechanisms and rates for establishing a stormwater user fee. This method of financing flood protection and stormwater management activities, such as those discussed in other AIs, is being used by an increasing number of communities around the country. It has proven to be stable, adequate, flexible and equitable. It deserves special attention as the recommended funding mechanism for this plan. Recommended (sub-) AIs:

a. Obtain permissive State legislation.
b. Prepare a description of the benefits, costs, and operational aspects of a stormwater user fee.
c. Prepare an estimate of the annual stormwater management and flood protection financing needs of Huntsville.
d. Develop a budget that shows how the income will be used.
e. Develop rates that are fair to all users of the stormwater system.
f. Keep the public informed.
g. Review other sources of income, such as a charge for reviewing new development's stormwater plans and/or flood protection measures (currently the City does not charge for this permit review).
h. Any other items as needed.

In combination the above AIs cover all six of the floodplain management categories detailed in Section 510 of the CRS Coordinators Manual (2007). Table 8-1, taken from the FMP 2010-2011 update, lists each AI and applicable floodplain management categories.

Table 8-1. AIs and Floodplain Management Activity Categories							
AIs		Preventive	Property Protection	Natural Resource Protection	Emergency Services	Structural Projects	Public Information
1	Floodplain Mapping	X			X		
2	Watershed Plans	X	X	X	X	X	
3	Stormwater Management Regulations	X					
4	Floodplain and other Zoning Regulations	X		X			
5	Regulatory Procedures	X		X	X		
6	Drainage Maintenance Program			X		X	
7	Pilot Flood Response Plan				X		
8	Critical Facilities Plan				X		
9	Ongoing public information		X				X
10	New public information projects		X				X
11	Stormwater User Fee Funding Mechanism					X	

Action Items Prioritization and Funding

In considering prioritization, the FMP Committee (Committee) first looked at the need for (not amount of) funding, staffing, public support and dependence on other AIs. Needs were ranked on a scale of 1-10, with 10 requiring the greatest amount of resources in question and 1 the least; reference Table 8-2, taken from the FMP 2010-2011 update, below.

Table 8-2. AI Prioritization Matrix					
	AIs	Funding	Staffing	Public Support	Dependant on Action Item
1	Floodplain Mapping	9	1	1	11
2	Watershed Plans	10	1	1	1, 11
3	Stormwater Management Regulations	8	5	7	11
4	Floodplain and other Zoning Regulations	1	9	7	
5	Regulatory Procedures	2	10	1	
6	Drainage Maintenance Program	5	5	3	11
7	Pilot Flood Response Plan	5	5	1	1, 11
8	Critical Facilities Plan	2	7	1	
9	Ongoing public information	1	2	1	
10	New public information projects	1	4	1	
11	Stormwater User Fee	8	4	10	

In general, it became evident that most items had a strong need for funding, staffing, or a combination of both. Unfortunately because necessary additional funding and staffing are not available for the foreseeable future, only a couple of these AIs appear possible to achieve without the additional resources. Of course, additional funding would directly and could indirectly solve both of these needs; hence AI 11 – Stormwater User Fee funding mechanism appears to be a top priority.

The Stormwater User Fee concept is a sensitive topic receiving a 10 ranking in need for Public Support. Significant effort will be required to educate the public on its workings and need to ensure that misinformation does not taint the process. Obtaining permissive legislation through the Alabama Legislature is one of the first steps that must be taken. It appears that the next regular Legislative Session in which such legislation might be introduced will be in 2015.

As AI 1, Floodplain Mapping, is needed for two additional AIs, thus it is of a high priority. Once AI 1 becomes reasonably satisfied, moving on to AI 2, Watershed Plans, would be the next logical course of action.

AIs 3, 4, 5, and 6 - Stormwater Management Regulations, Floodplain and other Zoning Regulations, Regulatory Procedures, and Drainage Maintenance Program Regulations, respectively – all have some element in place already. Consequently, they are of a lower priority.

AI 7, Pilot Flood Response Plan, is dependent on the availability of real-time monitoring, which is beyond the current scope of the EMA's services. This is pursuant to the development of real-time monitoring gauges. In lieu of this capability, the EMA has developed a generic flood response Standard Operating Procedure (SOP) in conjunction with the Huntsville Police and Huntsville Fire and Rescue departments and the amateur radio group. The EMA is awaiting United States Geologic Survey (USGS)

development of new stream gauge technology, but this effort is underfunded. Also, it was intended that this effort be incorporated into the City's Intelligent Traffic System, which has not yet been developed.

For AI 8, Critical Facilities Plans, is of moderate priority with a key limiting factor being staff resources to complete the task.

AI 9, Ongoing Public Information, is of an even lower priority as it is generally being met. As there is already significant outreach to owners of property in the floodplain with the City's annual direct mailing. AI 10, New Public Information Projects, is of the lowest priority.

As previously mentioned, all but the two lowest prioritized AIs require a level of funding and/or staffing that is not currently available; hence, scheduling of work on these AIs is difficult. As funding and staff levels to work on these AIs become available, they will be pursed as prioritized.

Action Items Progress Evaluation

As mentioned in the previous section the AIs require a level of funding and/or staffing that is not currently available; hence, scheduling of work on these AIs is difficult. As funding and staff levels to work on these AIs become available, they will be pursed as prioritized.

No increases in available staff to work on the AIs occurred this year. And, although no new significant funding was available for AIs, some projects from previous years are still ongoing regarding AI 1, Floodplain Mapping. These projects include Limestone Creek, Beaver Dam Creek II, the majority of Zone A's within the City Limits et al.

The majority of the items in AI 9, Ongoing Public Information, continue.

Floodplain Management Plan Recommended Changes

Beyond adding the Flood Events section information, only grammatical/text changes to the FMP are recommended and included in brackets in the text above. Also, some of the acronyms were expounded upon in the AIs section above for clarity; the FMP has a list of them near the beginning as well as details them out upon first reference.

None of recommended additions and changes is of urgent consequence and can wait until the next FMP update.

Attchments